

OCEANIDS

User-driven applications and tools for Climate-Informed Maritime Spatial Planning and integrated seascape management, towards a resilient & inclusive Blue Economy

D1.3 – Ethics

WP1 – Project Management



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1 Executive Summary

This document is the Ethics Report (D1.3) defined under Task 1.3 of OCEANIDS (Project No.101112919). This deliverable will assure compliance with ethical standards and best practices. Furthermore, it will describe how ethical considerations can drive innovation.

OCEANIDS will adhere to the statement included in the GA (Grant Agreement) of the project in Article 14 (14.1) “The action must be carried out in line with the highest ethical standards and the applicable EU, international and national law on ethical principles”.

The OCEANIDS initiative represents a pioneering effort to integrate Climate-Informed Maritime Spatial Planning (CI-MSP) with the overarching goal of reinforcing the sustainability and inclusivity of the Blue Economy. This Ethics Report elucidates the project’s unwavering commitment to ethical excellence, in strict accordance with the European Union’s Horizon Europe program’s rigorous ethical standards. Central to this report is the delineation of ethical considerations inherent to the project and the articulation of robust strategies devised to address these considerations.

Foremost among these are comprehensive measures to ensure data protection and privacy in compliance with the General Data Protection Regulation (GDPR), meticulous protocols for stakeholder engagement and the securing of informed consent, and a proactive stance on assessing and mitigating environmental impacts. The project’s dedication to an Ethics by Design methodology ensures that ethical considerations are intricately woven into the fabric of project technologies and methodologies from inception to conclusion. Through detailed risk assessments, the report outlines potential ethical pitfalls and their corresponding mitigation strategies, establishing a comprehensive ethics compliance, monitoring, and reporting framework. This executive summary encapsulates the report's assertion that the OCEANIDS project is not only a testament to scientific and technological advancement but also a beacon of ethical integrity and responsibility.

It is crucial to note that according to the GA, Geosystems Hellas (GSH) is designated as the responsible organization for this deliverable. However, it is DRAK that possesses the expertise to deliver comprehensive and precise documentation. DRAK, renowned for its provision of top-tier legal services at the highest global standards, will oversee ethics and legal matters.

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Table 1. List of Acronyms/Abbreviations

Acronym / Abbreviation	Explanation
AI	Artificial Intelligence
CAP	Climate Adaptation Planning
CC	Climate Change
CI-MSP	Climate-Informed Maritime Spatial Planning
DMP	Data Management Plan
DPIAs	Data Protection Impact Assessments
EIAs	Environmental Impact Assessments
EU	European Union
GA	Grant Agreement
GDPR	General Data Protection Regulation
ICT	Information and Communication Technology
MSP	Marine Spatial Planning
NGOs	Non-Governmental Organizations
WP	Work Package

2 Introduction

Coastal regions are often characterised by strategic socio-economic assets (i.e., linked to tourism, fisheries, harbours, and shipyards). This makes coasts particularly sensitive to Climate Change (CC) impacts, which primarily expose infrastructure and local population. Human activities are also responsible for additional pressures on coastal ecosystems, often generating more immediate impacts than those expected from CC by aggravating existing vulnerabilities. The need for CC adaptation in coastal areas is evident and is predicted to become progressively more significant over time due to the grim long-term forecasts of climate variables. Coastal area adaptation strategies should be iterative and dynamic, due to the evolving dynamics of coastal territorial systems. Furthermore, CC adaptation measures should consider local ecology, economy, society, politics, and technology. Therefore, the definition of Climate Adaptation Planning (CAP) must consider specific local socio-economic contexts. The OCEANIDS project aims to develop the tools and applications that enable a more resilient and inclusive society in coastal regions via better-informed and integrated seascape management. The central concept is to collect, harmonize, and curate existing climate data services, making data accessible, reusable, and interoperable for developing local adaptation strategies.

The role of WP1 “Project Management” is to coordinate and monitor efficiently all the progress of the OCEANIDS project towards the objectives, ensuring compliance of the activities with the GA, the optimal completion of the administrative, financial and scientific activities conducted, as well as define and monitor the Ethics that may arise throughout the project implementation. The WP1 consists of the following tasks:

- Task 1.1: “Project management and coordination towards objectives” [M1-M32]
- Task 1.2: “Data management plan (DMP)” [M1-M32]
- **Task 1.3: “GDPR and Ethics (social, gender and inclusivity) aspects” [M1-M32]**

This document is the deliverable **D1.3 “Ethics”**, presenting the Ethics Management of the OCEANIDS project. It is one of the outputs of **Task 1.3 “GDPR and Ethics (social, gender and inclusivity) aspects”**, and represents the third deliverable of WP1, but the first one among the two iterations of the Ethics. The following sub-sections present the scope and objectives, as well as the structure of the document.

2.1 Scope and objectives of the deliverable

At its core, the OCEANIDS project aspires to redefine the paradigms of Climate-Informed Maritime Spatial Planning (CI-MSP), with a specific focus on enhancing the resilience and inclusivity of the Blue Economy. This ambitious endeavour is set against the backdrop of escalating CC challenges, aiming to harmonize the sustainable exploitation of maritime resources with the imperatives of environmental stewardship and social justice. The current report aims to introduce the general principles and the necessary information for outlining the **Ethics Plan** within the OCEANIDS project. The mentioned principles and standards should be considered by OCEANIDS partners and shareholders since ethical reasoning involves considering various factors, such as consequences, principles, rights, duties, and the interests of different stakeholders as well as during the collection, organization, storage and sharing of the generated data. Additionally, this report is focused on the elaboration of the ethical aspects that surround the OCEANIDS activities, analyzing also legislative and regulatory frameworks, as well as the overall OCEANIDS ethical management policy, and in particular the pilot-related requirements and processes.

This document is considered an ongoing process, and following the OCEANIDS progress, it will be updated throughout the project's duration presenting updated material.

2.2 Structure of the Deliverable

This document consists of the following chapters:

- **Chapter 1** is the executive summary of the deliverable.
- **Chapter 2** includes the Introduction, main scope and structure of the deliverable.
- **Chapter 3** includes the Ethics and Legal Framework.
- **Chapter 4** includes information regarding the Ethical Management.
- **Chapter 5** presents the Engagement of Stakeholders and Informed Consent.
- **Chapter 6** presents the regulations about Data Protection.
- **Chapter 7** includes information about “Ethics by Design” as a Driver of Innovation.
- **Chapter 8** is about the Environmental Impact and Sustainability.
- **Chapter 9** summarises the conclusions of this deliverable.
- **Chapter 10** are the references of this deliverable.

2.3 Relation to other projects and tasks

The deliverable is an outcome of **Task 1.3 “GDPR and Ethics (social, gender and inclusivity) aspects”**. The provided information can be used as input for the respective tasks concerning the exploitation activities (as part of WP6) and the WPs related to components' development activities

(WP3 and WP4). Moreover, Stakeholder engagement in the OCEANIDS project is designed to be inclusive, participatory, and reflective of the diverse interests and concerns of all parties impacted by the project's activities, mainly under the activities conducted in WP2. In addition, since this report also covers the ethical aspects of the OCEANIDS project, in particular with relevance to the identified stakeholders (mainly end-users) participating in the project's lifecycle, this document will define the roadmap for the activities of WP1 and WP5, where involvement of end-users is envisaged. To this end, WP1-Task 1.3 is present either directly or indirectly in all OCEANIDS WPs to provide input and ensure the optimal management of the ethical issues that may arise (**Figure 1**).

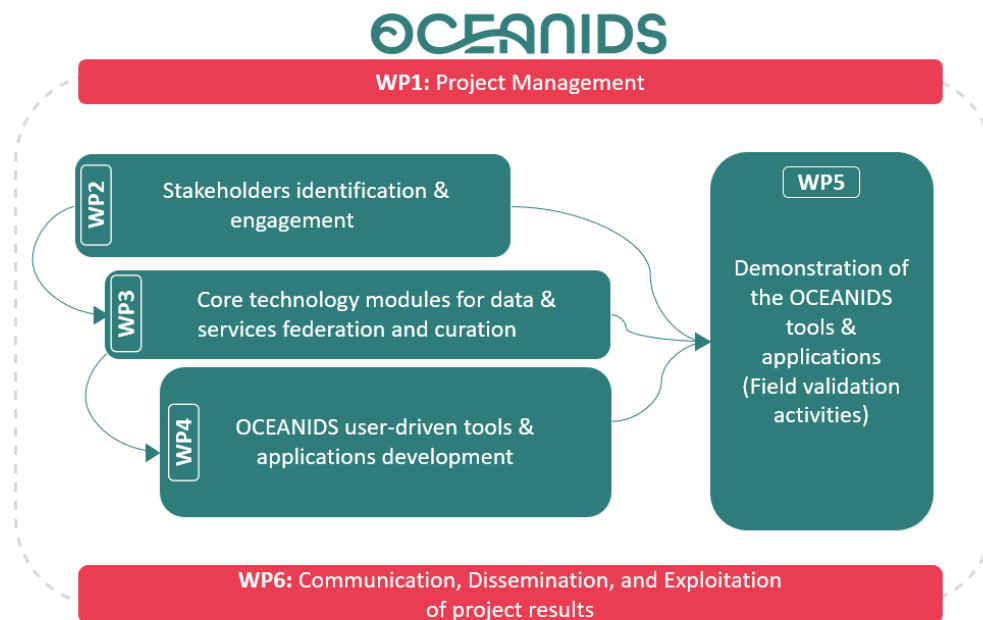


Figure 1. OCEANIDS WPs interconnection workflow

3 Ethics and Legal Framework

The OCEANIDS project is firmly anchored in a comprehensive ethics framework that ensures all research and development activities are conducted in accordance with the highest ethical standards set forth by the European Union's Horizon Europe program. This section delineates the project's commitment to ethical compliance, emphasizing adherence to established EU (European Union) regulations and guidelines, particularly in areas where ethical sensitivities are paramount.

3.1 Adherence to EU Horizon Europe Ethics Guidelines

The project's ethical framework is structured around the rigorous guidelines provided by the Horizon Europe program, which serves as a cornerstone for all project activities. These guidelines encompass a wide range of ethical issues, including but not limited to data protection, privacy, environmental sustainability, and the ethical treatment of human subjects. By strictly adhering to these guidelines, OCEANIDS ensures that its research practices not only meet scientific and technological objectives but also reflect a deep-seated commitment to ethical integrity.

3.2 Compliance with EU Regulations

A key component of the OCEANIDS project's ethical framework is its compliance with relevant EU regulations, most notably the General Data Protection Regulation (GDPR). The GDPR's stringent requirements on data privacy and security are meticulously observed in all project activities involving the collection, storage, processing, and dissemination of personal data. The project employs state-of-the-art data anonymization and encryption techniques to safeguard participant privacy and ensure data security.

The OCEANIDS beneficiaries shall carry out the project in compliance with:

- ethics principles (including the highest standards of research integrity) and,
- applicable EU, international and national law, including the EU Charter of Fundamental Rights and the European Convention for the Protection of Human Rights¹ and Fundamental Freedoms and its Supplementary Protocols.²

¹ https://www.echr.coe.int/documents/d/echr/convention_ENG

² https://www.europarl.europa.eu/charter/pdf/text_en.pdf

Additionally, the project aligns with other relevant EU directives and regulations, such as the Directive on the protection of animals used for scientific purposes, where applicable. This compliance is not seen merely as a regulatory obligation but as an ethical imperative that guides the project's methodologies and operational practices.

3.3 Ethical Approval and Oversight

To further cement its commitment to ethical excellence, the OCEANIDS project has instituted a robust process for obtaining ethical approval from relevant authorities and ethics committees. This process involves a thorough review of project proposals, methodologies, and data management plans to identify potential ethical issues and implement necessary safeguards, while also this process provides ongoing guidance and oversight, ensuring that ethical considerations are integrated into every stage of the project and that any emerging ethical issues are promptly and effectively addressed.

4 Ethical Management

4.1 General Principles of Ethics

There are some general principles that are commonly recognized across various ethical frameworks: autonomy, nonmaleficence, beneficence, justice, veracity, fidelity, respect for others, privacy, confidentiality, and integrity. By adhering to these principles, researchers can conduct their work in a manner that respects the rights and dignity of participants, promotes trust and integrity in the research process, and contributes to the advancement of knowledge for the benefit of society.

4.2 Ethical Policy

Within the context of the Ethical Policy:

- Detailed information will be provided to all end-users upon requesting their consent to any monitoring and data acquisition process. All participants will be strictly volunteers and will receive detailed oral (and where necessary written) information.
- There will not be any kind of centralized storage of personal or sensitive data. Moreover, where possible, data will be processed in a way that will not affect the final project outcome.

4.3 Ethical Risks

In general, there are not any critical ethical issues or problems to be introduced by the OCEANIDS project. Nevertheless, several typical considerations to ICT (Information and Communication Technology) applications and real-world pilot demonstrators shall be considered. The OCEANIDS consortium has the necessary experience and expertise to address any challenges that may arise regarding ethical risks and mitigate them seamlessly.

5 Stakeholder Engagement and Informed Consent

The OCEANIDS project recognizes the critical importance of engaging stakeholders and obtaining informed consent as foundational ethical practices. These practices ensure that the project's research activities are conducted with transparency, respect, and inclusivity, fostering positive relationships with all involved parties and enhancing the project's societal impact.

5.1 Stakeholder Engagement

Stakeholder engagement in the OCEANIDS project is designed to be inclusive, participatory, and reflective of the diverse interests and concerns of all parties impacted by the project's activities. The project adopts a multi-faceted approach to engagement:

- **Identification and Mapping:** Comprehensive identification and mapping of stakeholders, including local communities, governmental bodies, non-governmental organizations (NGOs), industry partners, and academic institutions, to ensure all relevant voices are heard.
- **Engagement Strategies:** Development and implementation of tailored engagement strategies that facilitate meaningful dialogue and collaboration. These strategies may include public consultations, workshops, advisory panels, and regular communication through newsletters and social media.
- **Feedback Mechanisms:** Establishment of effective feedback mechanisms that allow stakeholders to express their views, concerns, and suggestions regarding the project's direction and impact. This feedback is integral to ongoing project evaluation and adaptation.

5.2 Informed Consent

Informed consent is a cornerstone of the OCEANIDS project's ethical approach, ensuring that all participants understand the nature, purpose, and potential impacts of their involvement in the project. Key elements of the informed consent process include:

- **Clear and Accessible Information:** Provision of clear, accessible information about the project's objectives, methodologies, potential risks, and benefits, allowing participants to make informed decisions about their involvement.

- **Voluntary Participation:** Assurance that participation is entirely voluntary, with participants free to withdraw at any time without penalty.
- **Documentation and Record-Keeping:** Rigorous documentation and record-keeping practices to maintain evidence of consent and manage consent forms and information sheets in accordance with GDPR requirements.

5.3 Ethical Considerations in Engagement and Consent

The OCEANIDS project places ethical considerations at the forefront of its stakeholder engagement and informed consent processes, ensuring:

- **Respect for Autonomy:** Recognition of the autonomy of individuals and communities, respecting their right to make informed choices about their participation.
- **Cultural Sensitivity:** Adoption of culturally sensitive engagement and consent practices that acknowledge and respect the diversity of stakeholders and participants.
- **Privacy and Confidentiality:** Commitment to maintaining the privacy and confidentiality of information shared by stakeholders and participants during engagement activities and research participation.

6 Data Protection

Data protection regulations, such as the GDPR in the European Union, (Directive 2002/58/EC) set out specific requirements and obligations for organizations that collect, process, or control personal data. These regulations often include provisions for obtaining consent, notifying individuals of data processing activities, providing mechanisms for individuals to exercise their data rights, and imposing penalties for non-compliance.

In the digital age, the significance of data protection and privacy cannot be overstated, particularly in research projects like OCEANIDS, where data collection and analysis play a pivotal role. The project's approach to data protection and privacy is grounded in a comprehensive data management plan (DMP) that adheres to the GDPR and reflects a commitment to ethical data handling practices. This section outlines the key components of OCEANIDS's strategy for ensuring the highest standards of data protection and privacy.

6.1 The Data Management Plan

The DMP at the heart of the OCEANIDS project is a living document that guides all aspects of data handling, from collection and storage to processing and sharing. It ensures that data practices not only comply with legal requirements but also respect the privacy and autonomy of individuals whose data are being processed. Key elements of the DMP include:

- **Data Collection:** Clear protocols define what data are collected, how they are collected, and the legal basis for their collection, ensuring transparency and compliance with GDPR.
- **Data Storage and Security:** Data are stored in secure, EU-based servers with state-of-the-art encryption and access control measures in place to prevent unauthorized access and data breaches.
- **Data Processing and Analysis:** Processing activities are conducted with the utmost respect for privacy, employing data minimization principles and ensuring that personal data are anonymized or pseudonymized whenever possible.
- **Data Sharing and Transfer:** Guidelines for data sharing and transfer are strictly aligned with GDPR requirements, ensuring that data are shared with third parties only under conditions

that guarantee the continued protection of privacy and compliance with all regulatory requirements.

The DMP will form a component of Deliverable D1.5 titled "Data Management Plan," scheduled for delivery in M6 of the OCEANIDS project as its initial version. Subsequent iterations will be documented twice more, in Months 18 and 32 respectively, concluding at the project's end.

6.2 Ensuring Data Security and Participant Privacy

The OCEANIDS project implements rigorous security measures to protect the data it handles. These measures include:

- **Encryption:** All personal data are encrypted during transmission and storage, ensuring that data remain confidential and secure.
- **Access Controls:** Access to data is strictly limited to authorized personnel who have undergone ethics and data protection training, ensuring that only those with a legitimate need to access the data can do so.
- **Anonymization and Pseudonymization:** Whenever feasible, the project employs techniques to anonymize or pseudonymize data, thereby reducing the risk to individual privacy while still allowing for valuable research insights.

6.3 Transparency and Accountability

Transparency and accountability are key pillars of the OCEANIDS project's approach to data protection and privacy. The project ensures that:

- **Informed Consent:** Participants are fully informed about the nature of the data being collected, how it will be used, and their rights regarding their data, including the right to withdraw consent at any time.
- **Data Protection Impact Assessments (DPIAs):** DPIAs are conducted for all activities involving personal data, and where necessary under the GDPR, helping to identify and mitigate risks to data privacy.
- **Compliance Monitoring:** Regular audits and reviews are conducted to ensure ongoing compliance with GDPR and the project's DMP, with findings reported to relevant oversight bodies.

7 “Ethics by Design” as Driver of Innovation

“Ethics by Design” refers to the practice of integrating ethical considerations into the design and development process of technologies, products, systems, or services. It involves proactively addressing ethical concerns at every stage of the design process, from conception to implementation and beyond. The goal is to ensure that the resulting products or systems are not only functional and effective but also align with ethical principles and values.

The OCEANIDS project aims at an ethically focused approach while designing, developing, and deploying and/or using AI (Artificial Intelligence) solutions. The project is consistent with and upholds ethical principles such as **i)** respect for human agency, **ii)** privacy, personal data protection and data governance, **iii)** fairness, **iv)** individual, social and environmental well-being, **v)** transparency, and **vi)** accountability and oversight³. Ethics by Design within the project is intended to prevent ethical issues from arising in the first place by addressing them during the development stage, rather than trying to fix them later in the process. This is achieved by proactively using the principles as system requirements.

One main requirement for the OCEANIDS project is a non-negative effect on human autonomy, freedom, or dignity. It suggests that the project should not be developed or deployed in ways that unduly limit human choices, constrain individual freedoms, or undermine human dignity. On the contrary, the project adopts practices to augment human capabilities, enhance well-being, and promote human flourishing while safeguarding against potential negative impacts. Also, the project does not violate the right to privacy and personal data protection. The data is only used where it is deemed appropriate, non-biased, representative, and accurate.

Moving forward, the project ensures inclusivity, fairness, and non-discrimination in the ongoing development of it, because this contributes positively to all participants and other stakeholders while minimizing harm and promoting equality. In addition, the OCEANIDS project does not cause individual, social, or environmental harm, does not rely on harmful technologies, and does not influence others to act in ways which cause harm or lend themselves to function creeps. Furthermore, the developers employ various strategies such as providing documentation about

³ EU Grant - Ethics by Design and Ethics of Use Approaches for Artificial Intelligence, Version 1.0, 25 November 2021, pages 11-12

the project's design and functionality, explaining the rationale behind decisions made by the system, disclosing the data sources used for training, and implementing mechanisms for auditing and accountability. Ultimately, transparency is prioritized throughout the entire lifecycle of project development, from design and training to deployment and monitoring. Likewise, human oversight and accountability are indeed crucial to ensure adherence to principles and address instances of non-compliance. While the project can facilitate many tasks efficiently, there are aspects of decision-making and ethical judgment where human intervention is essential. Striking the right balance between automation and human involvement is key to building trustworthy and effective systems.

The project conducts a thorough stakeholder analysis to identify and understand the needs, concerns, and perspectives of various stakeholders, including end-users, regulatory bodies, affected communities, and experts in relevant fields. Decision-making processes within the project are transparent and accountable. Decisions are documented, and rationales are provided to stakeholders, allowing for scrutiny and feedback. Mechanisms for accountability, such as clear roles and responsibilities, ethical review boards, and grievance procedures, are established to ensure that ethical standards are upheld throughout the project. The project adopts a continuous monitoring and evaluation framework to assess the ethical implications and societal impacts of developed technologies and methodologies. Feedback mechanisms are put in place to solicit input from stakeholders, and regular audits are conducted to identify areas for improvement and adaptation to changing ethical standards and societal needs.

By following these steps, the project ensures that ethical considerations are integrated into every aspect of its design and development process, ultimately leading to technologies and methodologies that are inherently ethical and promote positive societal impacts.

7.1 Ethics Risk Assessment and Mitigation Methodology

Following a structured **ethics risk assessment methodology**, partners of the OCEANIDS project can proactively identify and address ethical risks, thereby enhancing their reputation, building trust with the stakeholders, and reducing the likelihood of costly ethical lapses and compliance failures. Strategies should be put in place to minimize or eliminate potential risks that could impact the success of a project, business, or any other endeavour.

The project has already assessed potential risks and intends to remain alert to some that may arise during the course of the project. All parties concerned are implementing strong encryption protocols to protect sensitive data in transit and at rest. They collect only the necessary data and anonymize or pseudonymize where possible, provide clear and concise privacy policies outlining data collection, usage, and sharing practices, obtain explicit consent from users before collecting or sharing their personal data, if such an occasion arises, and conduct periodic audits to ensure compliance with privacy regulations and internal policies.

The OCEANIDS project also ensures diverse representation in data collection and model training to mitigate bias, adheres to accessibility standards to ensure equitable access for all users, engages with diverse communities to understand their needs and ensure inclusivity in product design and development, and conducts equity impact assessments to identify and address potential biases throughout the project lifecycle.

Over and above that, the project is in a constant risk assessment⁴ and management planning process. More precisely, the project intends to conduct regular reviews of privacy, equity, and environmental practices to identify emerging risks. To engage with stakeholders, including users, community groups, and environmental organizations, to gather feedback and address concerns. To provide ongoing updates and training to team members on ethical considerations and best practices. To adapt mitigation strategies and practices based on evolving ethical standards, regulations, and stakeholder expectations. To develop and maintain incident response plans to address ethical breaches promptly and effectively. To maintain transparency regarding ethical practices and accountability for addressing ethical concerns. To evaluate the probability of each ethical risk occurring based on project factors such as data handling practices, algorithmic design, and user interaction. To assess the potential impact of each risk on users, stakeholders, and the reputation of the project. By systematically identifying, assessing, and mitigating ethical risks within the project, stakeholders can promote responsible and ethical practices throughout its development and operation, thereby enhancing trust and sustainability in the platform.

Overall, the project performs a thorough ethics risk assessment and develops risk mitigation measures that cover the development, deployment, and post-deployment phases of the project.

⁴ EU Grants - *How to complete your ethics self-assessment*, Version 1.0, 13 July 2021, pages 43-44

By integrating these comprehensive risk assessment and mitigation strategies into the project lifecycle, all parties concerned can proactively address ethical concerns related to privacy, equity, and the environment while promoting responsible and sustainable practices.

7.2 Monitoring, Compliance and Reporting

Creating a framework for ongoing ethics monitoring involves establishing processes and mechanisms to continuously evaluate and ensure ethical conduct within the OCEANIDS project. Monitoring, compliance⁵, and reporting are essential components of various processes within our project, particularly in the field of research and innovation activities.

Monitoring involves actively observing and assessing activities, processes, or systems to ensure they are operating as intended and in compliance with relevant standards, regulations, or internal policies. Monitoring can be conducted through various means, including regular audits, automated systems, manual checks, and performance metrics. The OCEANIDS project establishes clear ethical guidelines, codes of conduct, and policies that outline expected behaviours and decision-making principles, identifies potential ethical risks and vulnerabilities within the organization's operations, projects, and relationships, collects relevant data and metrics to assess adherence to ethical standards and identify trends or patterns that may indicate areas of concern, and continuously review and refine the ethics monitoring framework based on feedback, emerging issues, and changes in regulations or industry standards.

Compliance refers to adhering to laws, regulations, standards, policies, and guidelines that are applicable to said project. This includes legal requirements set forth by government agencies, industry standards, contractual obligations, and internal policies. Compliance ensures that all parties concerned operate ethically, legally, and responsibly, thereby minimizing risks and avoiding potential penalties or liabilities.

Reporting involves documenting and communicating relevant information related to monitoring and compliance activities. This includes compiling data, analyzing findings, and generating reports that provide insights into the consortium performance, adherence to regulations, and areas for

⁵ Working Group of European Research Administrators at German Universities, *Guidelines for ensuring compliance with ethical principles in Horizon 2020 – from proposal to Grant Agreement, June 2017, pages 2,3 & 6*

improvement. Reports may be submitted to regulatory authorities, stakeholders, management, or other relevant parties, depending on the context.

Effective monitoring, compliance, and reporting processes are critical for maintaining transparency, accountability, and integrity within organizations. They help identify and address potential risks, ensure regulatory compliance, and demonstrate commitment to ethical business practices. Additionally, they facilitate informed decision-making and continuous improvement initiatives. Integration of technology, such as data analytics, automation tools, and reporting software, can streamline these processes, enhance accuracy, and improve efficiency. Furthermore, establishing clear policies, procedures, and training programs can help ensure that partners understand their roles and responsibilities regarding monitoring, compliance, and reporting requirements.

The project incorporates ethical considerations into project planning and evaluation processes by conducting ethical impact assessments to identify potential ethical implications, risks, and stakeholders, includes ethical performance indicators and metrics in project reports to provide transparency and accountability regarding the organization's ethical conduct and compliance with ethical standards and integrates ethical considerations into decision-making frameworks and criteria, ensuring that ethical implications are weighed alongside financial, legal, and operational factors. This may involve establishing decision-making protocols that require consideration of ethical implications and consultation with ethics advisors or committees when necessary.

By establishing a robust ethics monitoring framework, clarifying the roles of ethics advisors and committees, and integrating ethical considerations into project reporting and decision-making processes, organizations can foster a culture of ethical behaviour, mitigate ethical risks, and uphold their commitment to responsible conduct.

8 Environmental Impact and Sustainability

The OCEANIDS project recognizes the critical importance of **environmental sustainability** and the potential environmental impacts of its research activities. As part of its commitment to the principles of sustainability and responsible research, the project has developed a comprehensive approach to assessing, monitoring, and mitigating its environmental footprint. This section details the project's strategies for minimizing negative environmental impacts and promoting environmental sustainability.

8.1 Environmental Impact Assessment

A foundational aspect of the OCEANIDS project's environmental strategy is the conduct of thorough **Environmental Impact Assessments (EIAs)**. These assessments evaluate the potential environmental consequences of the project's activities, identifying areas where impacts could be significant. The EIAs are designed to:

- Identify potential environmental impacts across all phases of the project, from data collection and fieldwork to the deployment of technologies.
- Evaluate the severity and likelihood of these impacts, considering both direct and indirect effects on ecosystems, biodiversity, and natural resources.
- Propose mitigation measures to reduce negative impacts, such as adopting less invasive research methods, utilizing renewable energy sources, and implementing waste reduction strategies.

8.2 Commitment to Sustainability

Sustainability is woven into the fabric of the OCEANIDS project, guiding decision-making and operational practices. The project's sustainability commitments include:

- **Reducing Carbon Footprint:** Implementing measures to minimize greenhouse gas emissions associated with project activities, including optimizing travel, leveraging virtual meetings, and selecting eco-friendly materials and technologies.
- **Promoting Biodiversity:** Ensuring that project activities do not adversely affect local biodiversity and, where possible, contribute to conservation efforts.
- **Resource Efficiency:** Adopting practices that enhance the efficient use of resources, including energy, water, and materials, throughout the project's lifecycle.

8.3 Monitoring and Continuous Improvement

To ensure that the environmental impact and sustainability goals are met, the OCEANIDS project has established a monitoring framework that includes:

- **Regular Environmental Audits:** Conducting audits to assess the effectiveness of implemented mitigation strategies and identify areas for improvement.
- **Stakeholder Engagement:** Engaging with environmental experts, local communities, and other stakeholders to gain insights and feedback on the project's environmental strategies.
- **Adaptive Management:** Employing an adaptive management approach that allows for the modification of practices in response to new environmental findings or stakeholder feedback.

8.4 Reporting and Transparency

Transparency regarding environmental impacts and sustainability efforts is a key priority for the OCEANIDS project. The project commits to:

- **Regular Reporting:** Publishing detailed reports on environmental impacts and sustainability initiatives, including achievements and challenges.
- **Public Engagement:** Actively communicating with the public and stakeholders about the project's environmental strategies and outcomes, fostering a culture of openness and accountability.

9 Gender aspects - inclusivity

The EU Gender Equality Strategy delivers on the Von der Leyen Commission's commitment to achieving a Union of Equality, under the Gender Equality Strategy 2020-2025. The Strategy presents policy objectives and actions to make significant progress by 2025 towards a gender-equal Europe. The goal is a Union where women and men, girls and boys, in all their diversity, are free to pursue their chosen path in life, have equal opportunities to thrive, and can equally participate in and lead our European society.⁶ OCEANIDS team considers the impact of gender, inclusion, and social norms throughout the project life cycle while respecting local culture. OCEANIDS promotes equal opportunities between men and women in the implementation of the action and is in line with the gender equality plan.

9.1 Gender Equality Plan (GEP)

For Horizon Europe calls for proposals with deadlines in 2022 and beyond, legal entities from Member States and HE Associated States that are **public bodies, research organisations** and **higher education organisations** must have a GEP or an equivalent strategy in place⁷. OCEANIDS Coordination team made sure that all the above-mentioned entities have an updated and uploaded GEP. Moreover, OCEANIDS considers gender balance at all levels of personnel assigned to the action, including at supervisory and managerial level.

9.2 Inclusivity in Marine Spatial Planning

Inclusivity in MSP: Marine Spatial Planning (MSP)⁸ is a public process that should be participatory, transparent, adaptive, and inclusive, balancing social, economic, and environmental needs. Building relationships and collaborating with all stakeholders, including traditionally underrepresented and marginalized groups, is key to the long-term success of MSP. An inclusive MSP process is key for creating economic opportunities in new and existing coastal and maritime sectors and enables

⁶ https://commission.europa.eu/strategy-and-policy/policies/justice-and-fundamental-rights/gender-equality/gender-equality-strategy_en#gender-equality-strategy-2020-2025

⁷ <https://www.horizon-europe.gouv.fr/sites/default/files/2021-12/gender-equality-5164.pdf>

⁸ https://oceans-and-fisheries.ec.europa.eu/ocean/blue-economy/maritime-spatial-planning_en

governments to meet their social targets and employment goals. This can result in better outcomes because involving a wide range of stakeholders can create a diversity of perspectives, new ideas, and innovative solutions.

Many people who depend on marine resources for their incomes and livelihoods regularly have their views and needs ignored in marine resource decision-making. These marginalized users include youth and elderly adults, individuals in small-scale fishing and coastal communities, Indigenous peoples, migrants (including seasonal migrants and displaced people), and women and girls. Other major resource users tend to consider these groups as unimportant or unaffected by marine planning decisions. Women, despite their key role in processing, are often not included in fisheries management or ocean-related decision-making bodies and do not have equal access to resources, financing, market information, training, and technology. This is important because gender is a critical organising category for coastal activities, and is of significant relevance and legitimacy to the MSP process.

9.3 Gender dimension in technology developments

The development and adoption of the OCEANIDS technologies, apps and platforms do not create any gender inequalities per sector, but rather aim at improving environmental conditions, and the general urban environment, for all people equally. However, the consortium is aware that there may be differences in the way genders perceive the use of technology and its applications. In addition, across the globe, there are significant differences with regard to the responsibility and role of genders in environmental health-related activities. Hence, the integration of multi-stakeholders and multi-gender perspectives into planning and implementation activities is a pre-condition to ensure that gender issues are adequately identified and treated throughout the project. Moreover, the OCEANIDS supports a work environment in which all genders bring their experiences as an integral dimension so as to benefit equally and thus comply with EU policy on equal opportunities⁹. The consortium respects the EU's objectives in Articles 2 and 3 of the Amsterdam Treaty¹⁰ with respect to the balanced participation of women and men in the decision-making process.

⁹ <https://eur-lex.europa.eu/EN/legal-content/glossary/equal-opportunities.html>

¹⁰ <https://www.europarl.europa.eu/about-parliament/en/in-the-past/the-parliament-and-the-treaties/treaty-of-amsterdam>

OCEANIDS gender strategy:

- All partners are committed to promoting equal employment opportunities.
- Establishing a set of gender indicators to measure progress towards gender equality.
- Establishing links with the European platform of women scientists to promote gender equality in scientific research.

In general terms no gender-specific issues are affected by the overall topic of OCEANIDS; however, if gender-specific issues will arise, they will be addressed to ensure equality. The responsibility to take action in this respect is given to the Project Ethics advisor along with the Coordination Team. The responsibility to ensure gender equality in all actions is distributed to all beneficiaries.

Table 2. Main contacts/roles regarding Ethical issues.

Project Coordination Team		
Role in OCEANIDS Project	Name	Email address
Project Coordinator	Betty Charalampopoulou	b.charalampopoulou@geosystems-hellas.gr
Project Manager/Administrator	Eirini Marinou	i.marinou@geosystems-hellas.gr
Ethics Advisor	Panagiotis Tampoureas	ptampoureas@drakopoulos-law.com

10 Conclusions

As the OCEANIDS project approaches its culmination, this Ethics Report serves not only as a testament to the project's unwavering commitment to ethical integrity but also as a blueprint for future endeavours within the EU Horizon Europe framework and beyond. Through meticulous planning and a proactive approach to ethical considerations, the project has demonstrated how cutting-edge scientific research can be harmoniously conducted alongside the highest standards of ethical conduct.

The comprehensive strategies outlined for data protection and privacy, stakeholder engagement and informed consent, environmental impact and sustainability, and the overarching ethics framework and compliance mechanisms underscore a profound commitment to ethical excellence. These measures ensure that the OCEANIDS project not only adheres to the rigorous demands of the GDPR and other relevant EU regulations but also fosters an environment of trust, transparency, and respect for all participants and stakeholders involved.

Furthermore, the project's dedication to minimizing its environmental footprint and promoting sustainability initiatives highlights a responsible approach to research that recognizes the importance of preserving our planet for future generations. The integration of ethical considerations into every facet of the project, from initial planning through to execution and reporting, sets a benchmark for future research endeavours.

In conclusion, the OCEANIDS project stands as a beacon of ethical and sustainable research within the EU Horizon Europe program. The lessons learned and the practices established throughout this project will undoubtedly contribute to a broader understanding and implementation of ethical principles in research. As we move forward, the project's legacy will be reflected not only in its scientific achievements but also in its contribution to fostering a more ethical and sustainable research landscape. If any unexpected ethical issues surface during our project, we commit to promptly contacting the granting authority through our Funding & Tenders Portal account.

11 References

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